

4 41. The illumination system of claim 40, wherein each of said first plurality of raster elements has a planar surface, and wherein said collector unit and said first plurality of raster elements transform said plurality of primary light sources into said plurality of secondary light sources.

42. The illumination system of claim 38, wherein each of said first plurality of raster elements is arranged and oriented to superimpose said plurality of images in said plane forming an illuminated field.

43. The illumination system of claim 42, wherein said optical unit has a shape of a pyramid with a plurality of sides, wherein each of said plurality of sides corresponds to one of said plurality of primary light sources, and wherein said first plurality of raster elements is arranged on said plurality of sides.

44. The illumination system of claim 43, wherein each of said plurality of sides is oriented to superimpose said plurality of images in said plane.

45. The illumination system of claim 38, further comprising a second plurality of raster elements.

46. The illumination system of claim 45, wherein said second plurality of raster elements is located at said plurality of secondary light sources, wherein each of said plurality of secondary light sources is located on one of said second plurality of raster elements, and wherein each of said first plurality of raster elements and each of said second plurality of raster elements is arranged and oriented to superimpose said plurality of images in said plane forming an illuminated field.

10 ~~47~~. The illumination system of claim ~~46~~⁹, wherein each of said second plurality of raster elements has a concave surface.

48. The illumination system of claim 47, wherein said optical unit has a shape of a pyramid with a plurality of sides, wherein each of said plurality of sides corresponds to one of said plurality of primary light sources, and wherein said second plurality of raster elements is arranged on said plurality of sides.

49. The illumination system of claim 48, wherein each of said plurality of sides is oriented to superimpose said plurality of images in said plane forming an illuminated field.

50. The illumination system of claim 46, wherein said optical unit comprises a plurality of pyramids, wherein each of said plurality of pyramids has a plurality of sides, wherein each of said plurality of sides corresponds to one of said plurality of primary light sources, and wherein each of said second plurality of raster elements is arranged on one of said plurality of sides of said plurality of pyramids.

51. The illumination system of claim 50, wherein each of said plurality of sides of said plurality of pyramids is oriented to superimpose said plurality of images in said plane forming an illuminated field.

15 ~~52~~. The illumination system of claim ~~51~~¹⁴, wherein each of said second plurality of raster elements has a concave surface.

16 ~~53~~. The illumination system of claim ~~51~~¹⁴, wherein each of said second plurality of raster elements has a planar surface.

54. The illumination system of claim 46, wherein said optical unit comprises said second plurality of raster elements, and wherein each of said second plurality of raster elements is arranged and oriented to superimpose said plurality of images in said plane forming an illuminated field.

55. The illumination system of claim 54, wherein each of said second plurality of raster elements has a concave surface.

56. The illumination system of claim 54, wherein each of said second plurality of raster elements has a planar surface.

57. The illumination system of claim 38, further comprising an optical element and an exit pupil, wherein said optical element is situated in an optical light path between said plurality of secondary light sources and said plane, to image said plurality of secondary light sources into said exit pupil.

58. An EUV-projection exposure system comprising:
the illumination system of claim 38;
a mask located in said plane;
a projection objective lens; and
a light-sensitive object on a carrier system wherein an image of said mask is formed on said light-sensitive object.

59. A method for production of microelectronic components, comprising the step of using said EUV-projection exposure system of claim 58.--

REMARKS

This application now contains claims 38 through 59.